



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/737,122

12/17/2003

Koji Morita

90606.1

5990

7590

06/29/2005

KEATING & BENNETT LLP

Suite 312

10400 Eaton Place

Fairfax, VA 22030

EXAMINER

CLARK, SHEILA V

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/737,122

Applicant(s)

MORITA ET AL.

Examiner

S. V. Clark

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 14, 15, 16-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 7-9, 12, 13, 18 and 20 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 10, 11, 19 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/03, 8/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Art Unit: 2815

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 7, 8, 9, 12, 13, 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al (5, 291, 065).

Arai et al shows an electronic substrate having a plurality of chips where the substrate comprises a first conductive member 310C which is electrically connected to one of the chips 4, a second conductive member 330 which is electrically connected to another one of the chips via 5G and emitter electrode.

An insulating layer 320 shown electrically isolating the second conductive member from the first. The first member 310C is shown forming a base that supports the insulating layer, chips and second conductive member.

A patterned conductive film 330 is provided on the insulating layer and functions as a second conductive member.

Figure 6 shows and col.7, lines 29-37 teaches that first and second power supplies 503 and connected to control devices 5 and a low voltage power source and thereby connected to said conductive base and second conductive member.

Said power supply electrodes and second conductive member are taught in col.8, lines 46 to be formed in a metal pattern. Metal patterns may typically be foils and to thereby form said pattern as a foil would have been obvious to one having ordinary skill in this art as foils are typically utilized as interconnects and as Arai et al teaches

Art Unit: 2815

that said metal may be pressed or punch is deemed to suggest that said metal may be formed as a thin sheet suggestive of foil.

Arai et al shows a power module.


Though the insulating sheet of Arai et al is formed of ceramic, insulating materials are often substituted one for another using such conventional materials as epoxy and polyimide. It would have been therefore obvious to substitute the ceramic material for epoxy or polyimide to provide modified mechanical and thermal stability. Further well known are insulating and metal layers of wide and varying thickness and whereby the thickness recited in the claims is not considered novel for metal nor insulating layers.

Copper plate 2 is shown on the back surface of said base and since copper is a heat sink material.

Claims 1-3, 7, 8, 9 12, 13, 18, 20 are rejected.

Claims 4, 5, 6, 10, 11, 19, 21 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant's election without traverse of group 1, claims 1-13, 18-21 in the reply filed on 45-12-05 is acknowledged. Any inquiry concerning this communication should be directed to S. V. Clark at telephone number (571) 272-1725.


S. V. Clark
Primary Examiner
Art Unit 2815

June 26, 2005